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## PINAL AIRPARK MASTER PLAN

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Prepared for the  
**County of Pinal**

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## CHAPTER 3

### INVENTORY

## Chapter Three INVENTORY

### INTRODUCTION

Planning for the future of Pinal Airpark requires complete understanding of its present and future roles. To accomplish this, information was compiled regarding the Airpark, the community, the region, and the state. This data base consisted of:

- Background information on the Marana/Pinal County area including population, socioeconomic, and other indicators of development potential in the region.
- A review of existing local and regional plans, regulations, and previous studies as they might relate to the development and implementation of the Airport Master Plan.
- Description and categorization of the various physical facilities and services provided at the Airpark.
- Aviation activity indicators and other patterns of use to identify present and future facility needs.

The information comprising this data base was obtained through on-site inspection of the airport, interviews with public officials and private users, and from available documents and reports. As the assumptions and recommendations of this study were based largely upon existing conditions at the Airpark and in the surrounding community, it was essential that the data be accurate and complete. The remainder of this chapter summarizes portions of the Inventory and introduces many topics which were analyzed in greater detail and will be documented in subsequent chapters.

The Airpark has been defined by the Federal Aviation Administration (FAA)—in the **National Plan of Integrated Airport Systems**<sup>1</sup> (NPIAS) and by the Arizona Division of Aeronautics—in the **Arizona State Airport System Plan**<sup>2</sup> (ASASP) as a General Aviation, Transport category airport. This classification identifies the airport (by means of its runway length, width, and pavement weight-bearing capacity) as a general aviation airport serving virtually all aviation aircraft.

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<sup>1</sup> **National Plan of Integrated Airport Systems, 1984-1993**; Federal Aviation Administration; August 1985; p. 520.

<sup>2</sup> **Arizona State Airport Systems Plan**; Arizona Division of Aeronautics; Volume 1.

The Inventory gave special emphasis to the history of the Airpark, the Airpark's relationship to the market area, and the environment in which the Airpark exists. This analysis was completed with a considerable amount of user input and covered the following areas:

- Airport History
- Airport Environs
- Meteorological Conditions
- Socioeconomic Analysis
- Transportation Modes
- Existing Airport Facilities and Their Condition
- Existing Navigational Aids
- Airspace
- Historical Aviation Activity
- Area Aviation Facilities
- Air Trade Area

### AIRPORT HISTORY

The following are major milestones in the development of the airport:

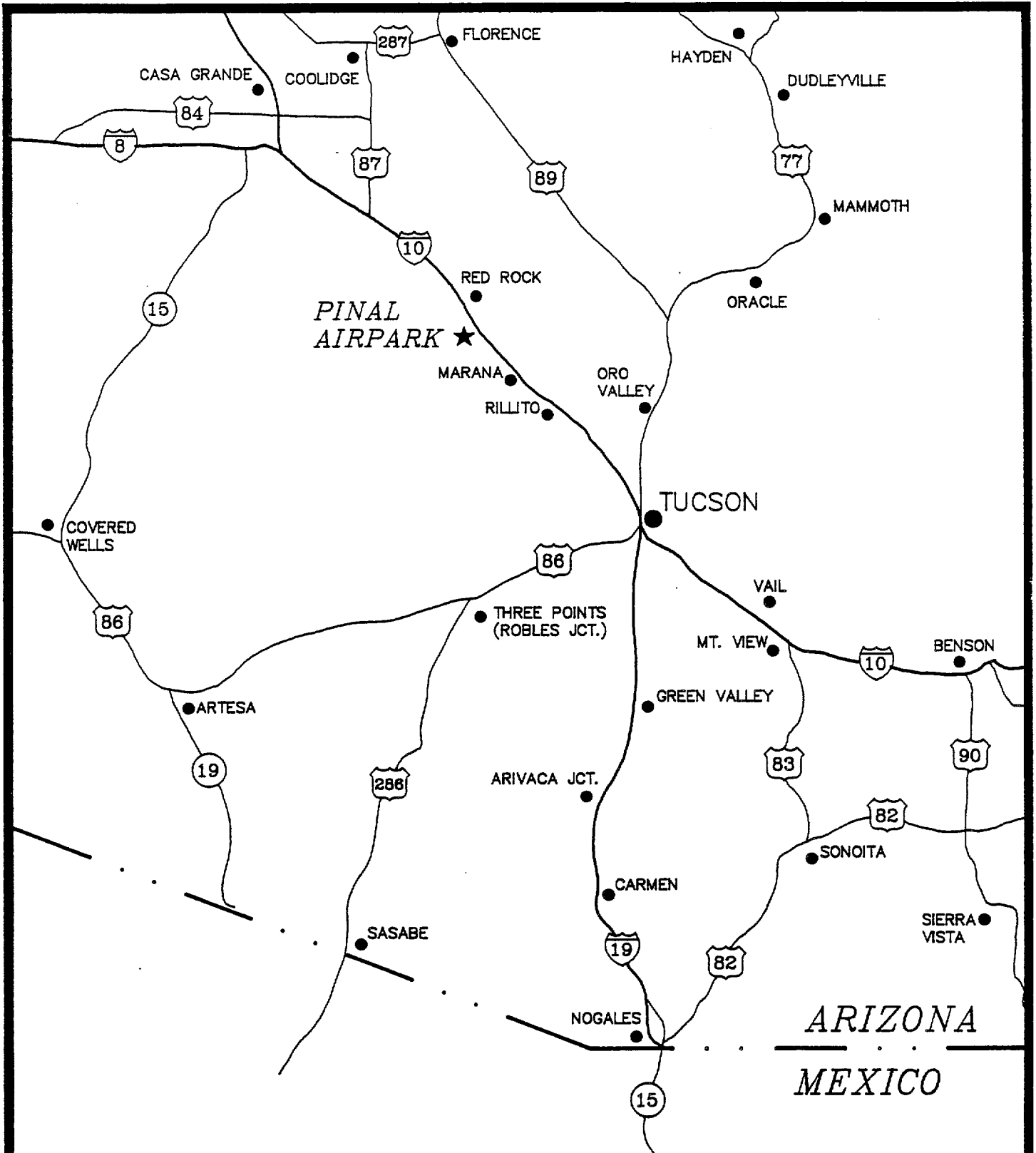
- |           |   |  |
|-----------|---|--|
| 1942      | - | Airpark was constructed by the Sundt and Del Webb Construction Companies for the U.S. Air Force for pilot training.  |
| 1948      | - | Pinal County accepted a deed to the property, subsequent to the Air Force's disposal of most of the buildings, waterlines, gas lines, electrical lines, and personal property. |
| 1948-1951 | - | Pinal County leased the property to multiple tenants for portions of facilities, land, etc.  |
| 1951-1956 | - | The Airpark was leased to Darr Aero Tech, Inc. All Airpark facilities—including runways, roads, and buildings—were reconstructed.  |
| 1957      | - | Beiser Aviation assumed Darr Aero Tech's lease upon the death of Hal Darr.   |
| 1960      | - | A new lease was granted to Sonora Flying Service, which purchased Beiser Aviation.   |
| 1961      | - | A new lease was granted by the County to Marana Air Park, Inc., following their purchase of Sonora Flying Service.   |

- 1966 - Marana Air Park, Inc., was sold to Intermountain Aviation, but continued to use the name Marana Air Park, Inc.
- 1971 - A new 10-year lease with Marana Air Park, Inc., was approved and signed by the County.
- 1975 - Evergreen Air Center, Inc., bought Marana Air Park, Inc. and took over the lease for the Airpark.
- 1982 - Evergreen Air Center, Inc., received a 25-year extension to the existing Airpark lease from Pinal County.
- 1986 - The new aircraft maintenance hangar was completed and dedicated by Evergreen Air Center, Inc.

### AIRPORT ENVIRONS

Pinal Airpark is located approximately 5 miles northwest of the City of Marana, 30 miles northwest of Tucson, and 75 miles southeast of Phoenix in Pinal County, Arizona (see Figures 1 and 2). The Airpark is 1,891 feet above mean sea level (MSL) and presently consists of a main northwest-southeast runway, designated 12-30, with connecting taxiways to a large aircraft parking apron. The runway is 6,850 feet in length and 150 feet in width. A variety of old runways and taxiways exist at the Airpark, but they are in extremely poor condition and are only used for aircraft storage. The Airpark is owned by Pinal County, which has leased the entire Airpark facility to Evergreen Air Center, Inc. The present lease agreement between Pinal County and Evergreen runs through the year 2007. Of the nearly 2,080 acres of existing airport property, approximately 1,500 acres are in aeronautical and related uses. A total of approximately 500 acres is programmed to be sold to the Department of Defense (DOD). The area required by the DOD is located on the western side of the Airpark.

Smaller general aviation aircraft users, including some corporations, may operate out of the area using Pinal Airpark, but only rarely. Avra Valley Airport to the south will attract the majority of potential users needing a full range of aviation services. The location of Avra Valley Airport makes it more attractive to the aviation user doing business within the Tucson area. Pinal Airpark has developed a special type of service over the years with a concentration on aviation activities that are not always attractive to most public airports. Many current tenant activities at the Airpark require considerable security.

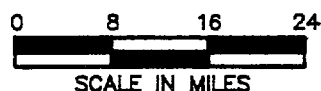


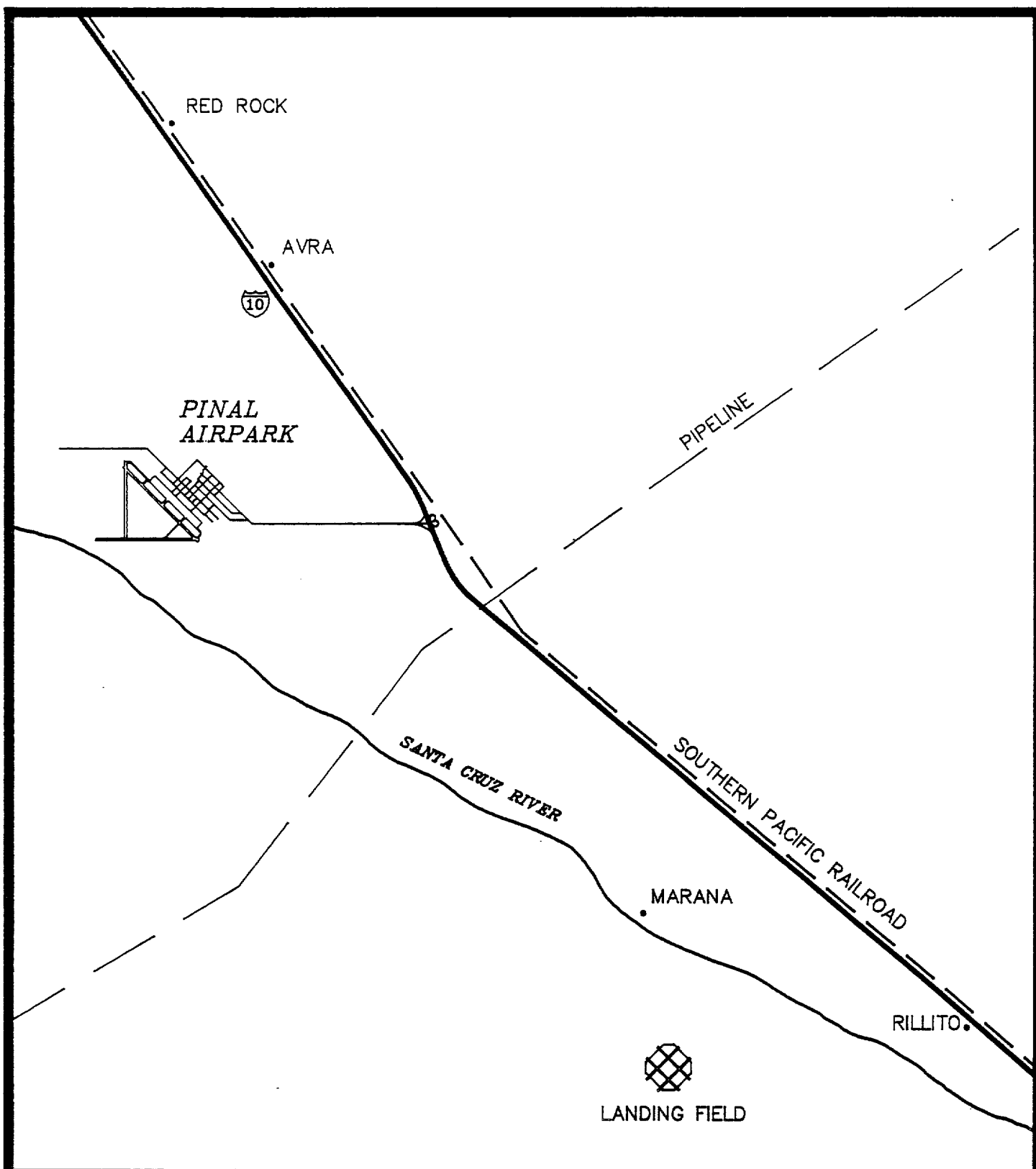
PINAL AIRPARK  
MARANA, ARIZONA  
LOCATION MAP

FIGURE 1



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PINAL AIRPARK  
MARANA, ARIZONA  
VICINITY MAP  
**FIGURE 2**

The majority of users and employees who either use or work at the Airpark come from the Pima County and Tucson areas. The aviation users on the Airpark, besides Evergreen Air Center, include Sierra Pacific, U.S. Forest Service, and the Department of Defense. The Western Army National Guard Aviation Training Site and the Arizona Army National Guard facilities are located adjacent to the Airpark. Other non-aviation users include the Federal Law Enforcement Training Center (FLETC), U.S. Forest Service National Advanced Resource Technology Center (NARTC), Elinor's Restaurant and Lounge, and a motel complex.

## **TOPOGRAPHY AND GEOLOGY**

The Environmental Review chapter of this Airport Master Plan will provide information about the topography and geology of the Airpark area in greater detail; however, for the purpose of the airfield inventory, a summary on soil types is presented here:

The topography and soils in the southern area of Pinal County and, more specifically, Pinal Airpark can be grouped into three areas. Soil Group A was classified as silty sand. Group B is classified as a clay, with Soil Group C being classified as silty sand to clay sand. The soils report came from the Special Study for Pinal Airpark conducted by the Air Force Engineering and Services Center, Tyndal Air Force Base, Florida. The report describes the soil material which exists at the Airpark as adequate support for pavement when properly compacted.

The proximity of the Santa Cruz River presents the possibility of flooding of the airfield from time to time. However, past history and information from tenants and local officials indicate that flooding is not a serious problem.

## **LAND USE AND ZONING**

Nearly all airport property and surrounding properties are under Pinal and Pima Counties' jurisdiction. Pinal County has no zoning ordinance to regulate development of the Airpark. Thus, Pinal Airpark is relatively unprotected from encroachment through noncompatible building which may occur on neighboring properties. This can occur on neighboring properties as the result of objects which may be built or which may grow to heights that could penetrate approach surfaces, or through smoke or other forms of air pollution. Pinal County has only a height-restriction ordinance, controlling the development of facilities that could cause problems for the Airpark in future years. The Airpark is located in a sparsely populated area of the County, with adjacent land predominantly in agricultural uses. Most of the land area outside the Airpark is either federally or state owned.

Future encroachment is not a major issue at the present time, because adequate land is owned or under control by the County, state, or federal government. Most surrounding land uses are compatible with the Airpark's operation, or the property is undeveloped, thus posing no immediate adverse effect. Additional analysis will be made of the potential for non-compatible growth later in the study, and recommendations will be presented with the proposed development plan.

## **METEOROLOGICAL CONDITIONS**

### **TEMPERATURE**

The Pinal County area has a predominantly dry desert-type climate, with hot summers and mild winters, and a fairly broad daily range of temperatures. The mean monthly temperature varies between 66.6°F. in January and 102.8°F. in July.

### **PRECIPITATION**

The average annual precipitation for the Pinal County area is 11 inches, with the majority of the rain fall occurring in the summer months of July through September. During this period, the area will experience the majority of its thunderstorms, which cause the greatest concentration of precipitation.

### **WIND**

Calm winds normally prevail over Pinal Airpark during the hours of darkness. Daylight hours usually begin with light breezes, with wind speed building throughout the afternoon. High winds will be experienced during periods of thunderstorm activity, normally for short periods of time and causing limited disruption to Airpark operation. There are no specific wind data available for the Pinal Airpark. The closest airport to record actual wind data is the Tucson International Airport. Using this data, we can determine that Runway 12-30 will provide 94 percent of the wind coverage using a 12-mile per hour crosswind. Using a 15-mile per hour crosswind, Runway 12-30 will provide 96.6 percent coverage. Pinal Airpark does not have an active crosswind runway, so at the present time, achieving a greater crosswind coverage is not deemed necessary for the larger high-performance aircraft presently using the Airpark. An illustration of the wind rose used for this project is included on the Airport Layout Plan Drawing developed during this project (see Chapter 7).



## **SOCIOECONOMIC FACTORS**

Several socioeconomic factors exert varying degrees of influence on the demand for air transportation services and facilities. Those influencing demands are primarily population, employment, and personal income levels in the area served by the airport. The socioeconomic health of the community, as demonstrated by population and employment growth and by the levels of personal income, is typically the primary determinant of aviation demand. This analysis did not place heavy emphasis on these characteristics as they relate to demand for air transportation services and facilities, due to the uniqueness of the Airpark. Also, this analysis was not intended as an in-depth economic base study of the Pinal Airpark Air Trade Area.

The use of socioeconomic data provides information for the normal analysis and forecasting of community and area growth, but it must be considered as only one element in the full picture. In this situation, projecting the growth in based aircraft or any other activity at Pinal Airpark will be far more dependent on the type of activity that is encouraged by the existing and future airport operator and Pinal County than on socioeconomic factors. It is still important to discuss the socioeconomic factors and how they might influence the future activity and demand at the Airpark. It must also be realized that future activity at Pinal Airpark may have a greater impact on the surrounding area than the area has on the airport.

### **POPULATION**

Population characteristics within an area are primary indicators of economic health. Consequently, it is essential in analyzing the economy of an area to examine these characteristics in terms of historical and projected population levels (see Table 3-1).

### **OTHER SOCIOECONOMIC FACTORS**

As previously discussed, a major employer in Southern Pinal County—with its maintenance facility on Pinal Airpark—is Evergreen Air Center, with 530 employees. Evergreen International is an owner of Evergreen Air Center which, under contract with Pinal County, operates the entire Pinal Airpark. At this base they perform aircraft maintenance on company-owned aircraft as well as on aircraft owned by other companies. The company's business plan has determined that aircraft modification and rehabilitation is a growing industry and one which is well-suited to their business. Many older jet aircraft have been experiencing structural and equipment failure in recent years. The FAA, in response to this growing problem, has issued directives requiring correction of known failures. Because of an aging fleet, rebuilding of these older will help to meet the growing demand for additional airline passenger and cargo aircraft. It is anticipated that rehabilitation of the older aircraft will become a growing industry.

**Table 3-1**  
**POPULATION COMPARISON**  
**STATE OF ARIZONA,**  
**PINAL AND PIMA COUNTIES**

	<u>State of Arizona</u>	<u>Percent Growth</u>	<u>Pinal County</u>	<u>Percent Growth</u>	<u>Pima County</u>	<u>Percent Growth</u>
1980	2,716,546	-	90,918	-	531,443	-
1985	3,181,400	17.1	99,400	9.3	597,000	12.3
1986	3,302,300	3.8	102,600	3.2	616,100	3.2
1987	3,452,600	4.6	107,200	4.5	640,100	3.9
1988	3,551,500	2.9	109,900	2.5	657,800	2.8
1989	3,654,700	2.9	112,200	2.1	675,300	2.7
1990	3,714,300	1.6	114,108	1.7	666,880	-1.2

SOURCE: Arizona Department of Economic Security; Office of the Director; January, 1990.

A similar situation exists in the military, with older aircraft of all types continually being modified or updated rather than replaced. Many companies recognize this area of potential business as being larger than the civilian market.

Evergreen Air Center executives, as well as others, have requested consideration of airfield improvements that would make possible their soliciting this expanded work. Pinal Airpark is in an ideal position to attract businesses of this type, due to the experience and facilities of Evergreen Air Center. The good weather and dry climate make Pinal Airpark especially attractive for this type of work, as can be seen by the number of large aircraft that are stored at the airport.

Evergreen has informed the County that the airport's facilities are not adequate for expanding this market. County staff have directed this master planning effort to analyze the required facilities that would enable Evergreen and others to compete for this new business. Chapter 4, Forecasts, of this document projects the types of aircraft in this market as well as the expected levels of activity. Chapter 5, Facility Requirements, recommends the facilities required to service the projected aircraft and activity.

## **HIGHWAY TRANSPORTATION**

**Major Highways:** U.S. Interstate Highway 10 (I-10), which travels a north-south route through the state, passes along the easterly boundary of the Pinal Airpark. The Airpark is located approximately 3 miles off I-10 on Pinal Airpark Road. On Airpark property, the main access road that runs throughout the terminal area to the Army National Guard facility is named Del Smith Boulevard. The roadway that parallels and is closest to the flight line is named Evergreen Way. Roads running perpendicular to Del Smith Boulevard are numbered First through Eleventh.

**Passenger Service:** Regular bus service is available in the Marana area to Tucson International Airport. Evergreen Air Center provides company bus service to Tucson for employees preferring not to drive their vehicles to work. Several round trips are made daily to assist commuting employees.

## **EXISTING AIRPORT FACILITIES**

An on-site inspection of Pinal Airpark was conducted, and the types and conditions of facilities noted. In general, the inspection revealed the airport to be in good condition, well operated, and well maintained. Existing airport facilities, as noted during the inspection, are summarized in **Table 3-2**, depicted in **Figure 3**, and described in the sections below.

### **AIRFIELD AREA**

#### **Paved Areas**

The airfield consists of one active runway, four closed runways, associated taxiways, lighting, and navigational aids. Runway 12-30, the active runway, is 6,850 feet long and 150 feet wide. Constructed of asphalt, its designed weight-bearing capacity is 30,000 pounds single-wheel (SW) loading, 100,000 pounds dual-wheel (DW) loading, and 150,000 pounds dual-tandem-wheel (DTW) loading, as addressed in the special study of Pinal Airpark pavement surfaces by the Air Force Engineering and Services Center. The runway surface is in good condition, since it was resurfaced in 1988 by Evergreen Air Center in accordance with their airpark lease. The runway has an effective gradient of .248 percent.

A parallel taxiway/taxilane is located north of Runway 12-30. A "Special Study of Marana Air Park," dated November 1980, was published by Air Force Engineering and Services Center, Tyndal Air Force Base, Florida. This study indicates that all facilities other than the primary runway were in poor condition.

**Table 3-2**  
**EXISTING AIRFIELD FACILITIES DATA**  
**Pinal Airpark**

	RUNWAY	
	12	30
Runway Length (ft.)	6,850	
Displaced Threshold (ft.)	None	
Width (ft.)	150	
Gradient	.248%	
Surface Material	Asphalt	
Condition	Good	
Load-Bearing Capacity (lbs.)	30,000 SW 100,000 DW 150,000 DTW	
Approach Slope Ratio:		
Existing	20:1	20:1
FAA Standards	20:1	20:1
Approach Aids	None	
Lighting (Existing)	LIRL	
Marking	Basic	Nonprecision

NOTES:

Sources: "Airport Master Record," FAA Form 5010-1;  
"Airport Facility Directory, Southwest U.S.";  
Site Inspection, SFC Engineering, March 1991; and  
Airport Management/Evergreen Air Center.

SW = Single-Wheel Loading  
DW = Dual-Wheel Loading  
DTW = Dual-Tandem-Wheel Loading  
LIRL = Low-Intensity Runway Lighting



The remaining airfield pavement areas are the aircraft parking apron and hangar area. The main airport apron is approximately 4,350 feet long by 535 feet wide, with an area of about 258,580 square yards. The large parking apron is primarily used by Evergreen and Sierra Pacific for short-term transient aircraft parking, which generally includes large air carrier type aircraft.

### Navigation Aids

There are two basic types of Instrument Flight Rules (IFR) approach procedures: nonprecision and precision. Minima for each of these procedures are specified for various aircraft speed and weight combinations defined in Table 3-3.

Approach speeds are based upon a value of 1.3 times the stall speed of the aircraft in the landing configuration at maximum certificated landing weight. An aircraft can fit into only one approach category—the one with the highest applicable speed and weight combination.

Of the fixed-wing aircraft which use Pinal Airpark, most fall into the C and D approach categories. These aircraft range from the Convair 580s that are predominant in the Sierra Pacific fleet to the Boeing 727s and 747s owned and operated by Evergreen International. Approach Category A and B aircraft do use the airport, but not with the same frequency as the larger and faster jet aircraft. The Army National Guard has a large fleet of helicopters that also operate at the airport facility.

In the performance of a precision approach, an aircraft is guided along both vertical and lateral paths. A precision approach to a runway is typically provided by an instrument landing system (ILS), which consists of a localizer and glide slope facility. The localizer aligns the aircraft with the runway centerline, and the glide slope provides descent information. In addition to the localizer and glide slope facilities, the runway is typically equipped with medium- or high-intensity runway lighting (MIRL or HIRL) and medium-intensity approach lighting system with runway alignment indicator lights (MALSR).

During the performance of a nonprecision approach, an aircraft is guided to the vicinity of the airport by one of several NAVAIDs. The aircraft may then descend to a specified altitude—the minimum descent altitude (MDA). Provided visual contact is made with the airport, the aircraft may proceed with the approach and landing—either straight in or circling, unless specifically designated on the specified runway as per published approach procedures.<sup>3</sup> If the airport is not sighted, the aircraft must terminate the approach at the MDA and either initiate a second approach or proceed to another airport.

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<sup>3</sup> "Instrument Approach Procedures"; U.S. Department of Commerce; April 7, 1988.

**Table 3-3**  
**FAA AIRCRAFT APPROACH CATEGORIES**

<u>Approach Category</u>	<u>Approach Speed and Typical Aircraft</u>
A	Speed less than 91 knots; most single- and multi-engine piston and turboprop aircraft.
B	Speed 91 knots or more but less than 120 knots; FH-227, Sabreliner, Cessna Citation.
C	Speed 121 knots or more but less than 141 knots; LearJet 24D, Boeing 737, JetStar.
D	Speed 141 knots or more but less than 166 knots; Boeing 707, Boeing 727, Boeing 747.
E	Speed 166 knots or more; any weight; Concorde.

Under the provisions of the Facilities and Equipment (F&E) element of the 1982 Act, eligible navigational aids would qualify for 100 percent (100%) FAA installation and maintenance funding. Qualification for this funding is based on the number of annual instrument approaches (AIAs) at the airport. Pinal Airpark has no precision or nonprecision approach and the associated required instrumentation at the present time.

Additionally, FAA funding assistance can be obtained for navigational aids under the provision of the Airport Improvement Program (AIP) of the 1982 Act. Under the provisions of AIP, navigational aids would be eligible for approximately 90 percent federal funding assistance. Maintenance would be provided by the airport owner/operator.

Certain landing aids are designed specifically to aid the pilot during visual (VFR) flying weather. The Precision Approach Path Indicator (PAPI) lighting system is designed to provide visual approach slope (descent) guidance information for both day and night operations. The PAPI system does not have any measurable effect on the capacity of an airport but significantly aids pilots in executing safe landings. The FAA's minimum requirement for approval of a PAPI installation is 5,000 landings annually on the subject runway end. Runway End Identifier Lights (REILs) consist of two flashing lights located

at the end of the runway and provide positive runway end identification. REILs are generally located on all Transport category runways which do not have an approach lighting system. Both the PAPI and REILs are eligible for federal installation and maintenance as part of the F&E program, although each is typically installed as a part of an AIP-funded project.

## **LANDSIDE AREA**

### **Terminal Area**

The terminal and general aircraft storage, or landside facilities, lie in the northeast portion of the property, occupying approximately 400 acres. The majority of buildings and roadways were constructed for the military during the original development of the Airpark. Most of the military's original facilities have been removed. Those that remain in use have been refurbished and are in fairly good condition. Some roads have been maintained and resurfaced with an asphalt overlay. Much of the original air base land area remains unused and available for development.

### **Hangars**

Three large conventional hangars are located within the landside area of the Airpark. The largest of the airport hangars is owned and operated by Evergreen Air Center and used for maintenance and refurbishment of commercial type Boeing 727s and 747s, and the McDonnell Douglas DC-9 and DC-10 aircraft. This building is named the George A. Doole Aviation Center. The Whalberg Hangar is used to store vintage aircraft owned by Evergreen International and its owner, Delford Smith. The Eason Hangar is presently being used by Evergreen Air Center for the restoration of its vintage aircraft.

One additional large conventional hangar is located on State property and owned by the Army National Guard. The National Guard hangar is used for storage and maintenance of military helicopters.

### **Air Traffic Control Tower**

An old airport air traffic control tower is located on the airport and is used by Evergreen Air Center as the Airpark security chief's office. The view of the entire Airpark provides an increased level of Airpark security and control over personnel patrolling in ground vehicles.



## **Other Airpark Facilities**

There are seven small buildings along the flight line that are used for storage or rental space for non-Evergreen Corporation companies. The Wall Building is used as a woodworking shop, while the building next to it—the Lane Building—houses the Evergreen engine and component overhaul operation. Located just behind the Doole Hangar is the Special Projects Building. This is a new facility used for company engineering projects, such as the 747 cargo door modification. Evergreen also operates an EPA-approved aircraft paint strip rack and an engine test cell. There are a number of buildings assigned to the motor pool for ground equipment maintenance.

Several refurbished military buildings have been leased for use by the Federal Law Enforcement Training Center (FLETC) and the U.S. Forest Service National Advanced Resource Technology Center (NARTC). These two large federal training schools provide training for law enforcement and forest service personnel from around the United States. The FLETC facility now includes a new paved training roadway, which was constructed in 1990 and is located between the terminal area and the Army National Guard Base. Serving all Airpark tenants are the Delford M. Smith Auditorium-Motel-Dormitory Complex (with 250 beds) and Elinor's Restaurant and Everybody's Lounge.

## **Army National Guard Complex**

The Western Army National Guard (ARNG) Aviation Training Site (WAATS) is located at the Silver Bell Army Heliport on the north side of the Airpark on State of Arizona land. The facility includes approximately 160 acres of land and was constructed in 1986. The WAATS facility is under the operational control of the National Guard Bureau. The real heart of the WAATS facility is the Flight Weapons Simulator. The training facility teaches about 800 pilots each year. There are 91 full-time military personnel and 31 helicopters based at the WAATS facility. The main WAATS facility has 61,000 square feet of space, which includes administration, dormitory, dining, medical, and flight simulator areas.

Also located at the Silver Bell Army Heliport is the Arizona Army National Guard's Army Aviation Support Facility. The complex includes the administration and training facility, and a large hangar for maintenance and storage of helicopters used in the base's missions. There are 37 helicopter landing pads, many other parking pads for storage of helicopters, underground fuel storage, and fuel-dispensing areas. The Support Facility has 50 full-time employees, with an additional 400 individuals utilizing the base resources.

The third facility at the Silver Bell Army Heliport is the 11285th Attack Helicopter Battalion of the Arizona Army National Guard. This facility includes 282 aviation personnel and 37 helicopters. The Armory contains 33,000 square feet of administration, supply, dining, and drill space.

## Automobile Parking

Automobile parking is currently available at each work area or in the immediate vicinity of most facilities. Considerable unpaved area is available and used for parking, as needed. The majority of the parking spaces available are for employees. There is a large area of public and employee parking adjacent to the George Doole Aviation Center, which is the primary hangar and office complex used by Evergreen Air Center. Each airport tenant, including the restaurant and motel, has adequate parking for employees and visitors. It is difficult to determine an actual number of parking spaces, because most of the areas are unmarked and unpaved.

## SUPPORT FACILITIES AND SERVICES

**Fuels:** Jet-A, aviation gasoline (AVGAS), and automobile fuels are available on the airport. All fuel storage and dispensing facilities and equipment are owned and operated by Evergreen Air Center. The fuel storage facility was installed in 1990 and consists of 7 above-ground storage tanks. It is a modern facility and has all safety and required monitoring equipment, including an automatic fire-extinguishing system. Fuel type and size of storage tank are depicted below:

<u>Fuel Type</u>	<u>Tank Size</u>
Jet-A (5 tanks)	30,000 gal.
100LL (low lead)	30,000 gal.
Automobile (no lead)	30,000 gal.

**Services:** Fire protection services are provided by Evergreen Air Center and the Army National Guard. Police services are handled by Evergreen Air Center personnel and the Pinal County Sheriff. Ambulance service is handled by private companies, with most immediate trauma care provided by trained Evergreen personnel and by the Marana Fire Department. Major hospital facilities are located in the Tucson area. Weather and flight services are available through Tucson Flight Service Station (FSS), located at the Tucson International Airport.

## UTILITIES

### Water

Water service is provided to the airport by 2 wells which pump water to 2 separate storage tanks. The primary storage tank is located at the entrance to the Airpark, and its capacity is approximately 125,000 gallons. The Army National Guard Base maintains a separate pump and storage facility.

## **Sanitary Facilities**

The Airpark has its own sanitary sewage system, which consists of 2 separate lagoons located on the west side of the airfield. All Airpark facilities, including the Army National Guard Base, pump their sewage to the lagoon system.

## **Electricity**

Electricity is provided to the Airpark by Trico Electric Company, a local supplier for electrical service.

## **Telephone**

Telephone service at the airport is provided by U.S. West.

## **Natural Gas**

Natural gas service is provided by Southwest Natural Gas Company.

## **ACCESS AND CIRCULATION**

Airport access to the terminal/hangar area is via Pinal Airpark road from I-10 and the on-airport entrance road, Del Smith Boulevard. Evergreen Way parallels the aircraft parking apron and is the closest roadway to the airfield. Del Smith Boulevard parallels Evergreen Way and extends from the entrance gate past the hangar area to the Army National Guard hangars and training facility. The perpendicular roads are numbered from First Street to Eleventh Street. Ocotillo Boulevard joins Del Smith Boulevard near the main entrance gate and services the restaurant and motel.

## **HISTORICAL AVIATION ACTIVITY**

### **BASED AIRCRAFT**

Pinal Airpark is not the permanent home for most of its stored aircraft. The majority of aircraft stored at the Airpark are old aircraft placed in long-term (inactive) storage. The aircraft are frequently sold to domestic and foreign operators and are returned to service, or sold to supply parts. A number of the aircraft are also used in Evergreen's aviation business. Evergreen provides safe storage for all of the aircraft prior to their being sold.

Once sold, Evergreen will put the aircraft in flyable condition so that they can be flown to their new base. No privately owned general aviation aircraft, other than those owned or controlled by Evergreen or Del Smith personally, are based at the airpark. No T-hangars or individual facilities exist to store privately owned and operated aircraft.

At the time of this Inventory, existing stored and active aircraft included:

Single-engine	- 5
Multi-engine	- 28
Jet	- 34
Helicopter - Civilian	- 3
Helicopter - Military	- <u>55</u>
TOTAL AIRCRAFT	125

The number of based aircraft tends to fluctuate throughout the year; thus, the number of aircraft counted at an airport is a representative rather than an absolute figure for the given year. The number of existing based aircraft at Pinal Airpark is shown above and was compiled from an on-site inspection by SFC Engineering personnel. It is estimated that roughly 70 to 80 of these aircraft are active, with the balance being stored for extended periods.

## ANNUAL OPERATIONS

The aircraft operations at Pinal Airpark are classified by functional activity as general aviation operations. In terms of type of operations (takeoffs or landings), all aircraft activities are divided into two categories—local and itinerant operations. **Local operations**, which are primarily general or military aviation, refer to those activities by aircraft that:

- Operate in the local traffic pattern or within sight of the airport.
- Execute simulated instrument approaches or low passes at the airport.
- Arrive from flights in local practice areas within a 20-mile radius of the airport.

**Itinerant operations** are all operations other than local. Examples of itinerant general aviation operations would be business flights or personal recreational flights out of the Pinal Airpark area.

Pinal Airpark does not have an active air traffic control tower. Most airports with FAA-operated air traffic control towers maintain very accurate records of all aircraft operations by aircraft type. Since there has been no regular monitoring and recording of air traffic activity at Pinal Airpark, accurate records are not available regarding air traffic activity.

Sources of available data included FAA Form 5010s—the Airport Master Record updated every 1 to 2 years by the FAA, a recent activity survey completed by the Army National Guard, and estimates of individual activity provided by Airpark users. The estimated annual operations for civilian and military aircraft are tabulated in Table 3-5.

**Table 3-5**  
**HISTORICAL OPERATIONS**  
Pinal Airpark

<u>Year</u>	<u>General Aviation<sup>a</sup></u>	<u>Evergreen<sup>b</sup></u>	<u>Military<sup>c</sup></u>		<u>Total</u>
			<u>Local</u>	<u>Itinerant</u>	
1988	55,000	10,000	52,000	33,000	150,000
1989	55,000	10,000	61,500	38,500	165,000
1990	48,850	10,000	71,500	44,750	174,500

Sources:

"Airport Master Record," FAA Form 5010s, for years indicated;  
Army National Guard Survey, Fort Rucker; operator estimates.

- a. Includes air taxi activity; local and itinerant.
- b. Includes general aviation operations serviced by Evergreen.
- c. Includes Department of Defense and Air National Guard activity.

## PEAK-HOUR ACTIVITY

The FAA defines peak-hour operational activity for general aviation airports as the level of average hourly traffic that occurs during a period of 2 consecutive hours and is equaled or exceeded about 30 times a year. Peak-hour activity, for planning purposes, is typically broken down by flight conditions—**Visual Flight Rules (VFR) flying** and **Instrument Flight Rules (IFR) flying**. According to the FAA, IFR conditions occur when the cloud ceiling is 1,000 feet or less above the ground and/or visibility levels are above these minima.

As an airport becomes increasingly active, the peak period of activity tends to level out. Aircraft operators have a tendency to schedule their flying when the field is not so busy, especially for recreational flying.

Peak-hour VFR activity at Pinal Airpark was established, based on Airpark management and Army National Guard estimates, as 205 VFR operations per hour, although approximately 89 peak-hour operations occur on airport runways.

### **AREA AVIATION FACILITIES**

The location and types of airports available in the vicinity of Pinal Airpark have a substantial impact on the existing and future aviation demand levels at the airport. Not only do these facilities play a part in delineating the air trade area but, with regard to small private fields, they also indicate an area of unfulfilled demand at this publicly owned airport and present an unknown factor for forecasting future demand.

Figure 4, Area Airports, highlights the numerous publicly and privately owned general aviation facilities located in the vicinity of Pinal Airpark in Pinal and Pima counties. Of the 12 airport facilities in close proximity to Pinal Airpark, 4 are publicly owned and 8 are private. Of the 8 private airfields, only one is open to public use.

### **AIRSPACE ANALYSIS**

There are basically two airspace environments—one present during VFR conditions and one present during IFR conditions, which requires landing aids. The VFR airspace is typically defined in relation to the airspace in the vicinity of an airport extending from the surface to 3,000 feet above the ground within a radius of 5 statute miles. Instrument approaches are developed and approved by the FAA and are published by the U.S. Department of Commerce, as well as by several commercial concerns. Instrument approach procedures have been published for Pinal Airpark. Figure 5 depicts airspace uses in the Pinal Airpark vicinity.

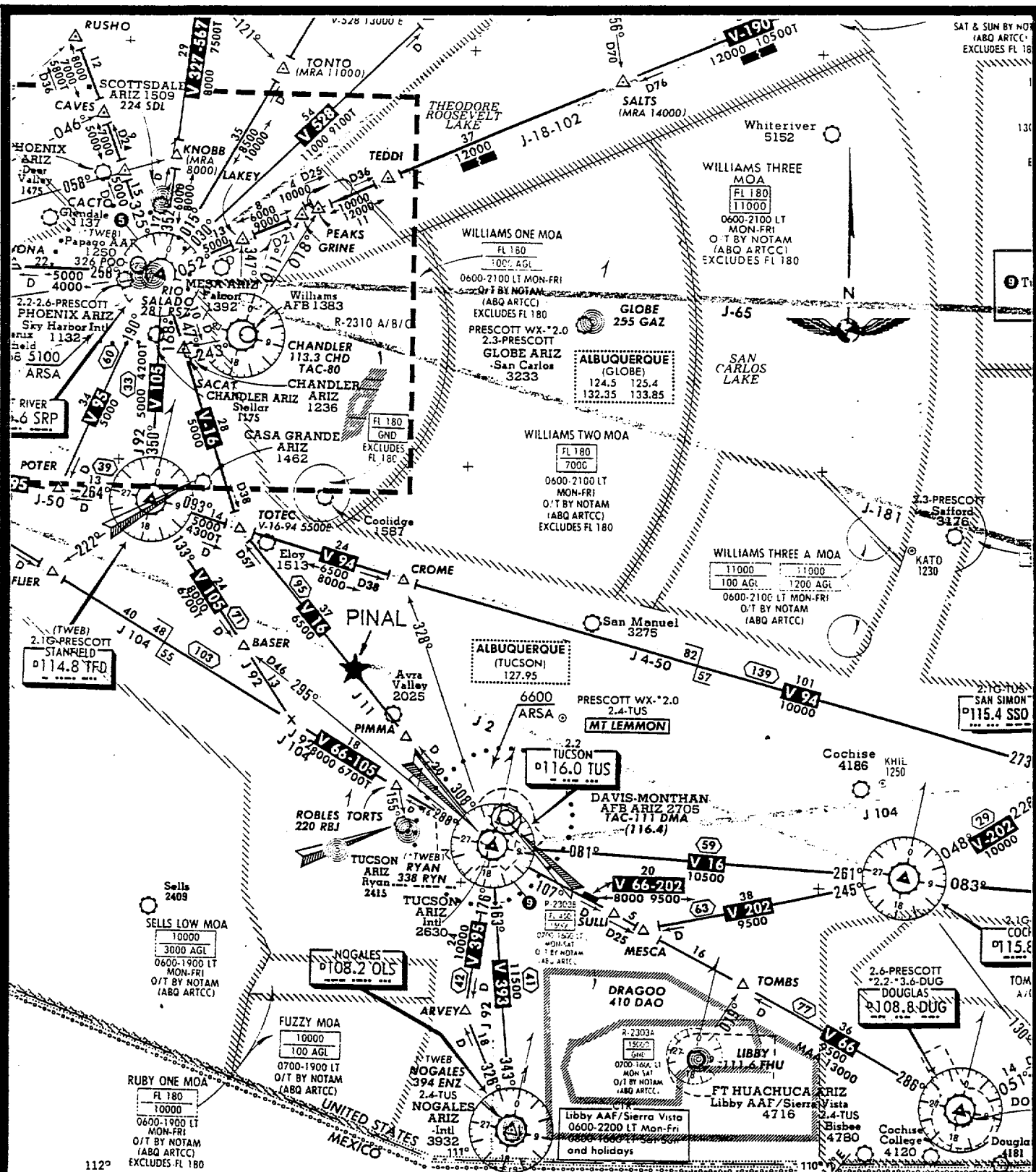


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0 8 16 24  
 SCALE IN MILES



PINAL AIRPARK  
 MARANA, ARIZONA  
 AREA AIRPORTS  
**FIGURE 4**



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**PINAL AIRPARK**  
**MARANA, ARIZONA**  
**AREA AIRSPACE**  
**FIGURE 5**



## **SPECIAL-USE AIRSPACE**

Special-use airspace is airspace wherein aircraft activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both. The various Special-Use Areas are identified by designators indicating the type of use: Prohibited Areas, Restricted Areas, Warning Areas, Military Operations Areas, Alert Areas, Controlled Firing Areas, and Parachute Jump Areas.

Special-use airspace in the vicinity of Pinal Airpark is identified on the Phoenix Sectional Aeronautical Chart dated November 15, 1990, published by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

Training or other military maneuvers may be conducted in **Military Operations Areas (MOAs)**. Nonmilitary VFR aircraft may travel through MOAs, if necessary, but should contact the appropriate Flight Service Station (FSS) (at Tucson, in the case of Pinal Airpark) for advice before doing so. MOAs are located within 50 statute miles of Pinal Airpark. Two large areas, identified as the "Sells 1 MOA" and "Sells 2 MOA," are west of Pinal Airpark. The aeronautical charts indicate that these MOAs exclude airspace below 3,000 feet above ground level (AGL) up to and including 10,000 feet AGL. The Williams 2, 3, and 3A MOAs are controlled areas to the north of Pinal Airpark. The Williams 2 MOA controls the airspace at the 7,000-foot altitude, the Williams 3 MOA restricts 11,000-foot altitude and the Williams 3A MOA restricts airspace from 100 AGL to but not including 11,000 feet AGL.

**Restricted Areas** often have invisible hazards to aircraft (artillery firing, aerial gunnery, guided missiles, etc.). Permission to fly through a Restricted Area must be obtained from the agency controlling that area prior to entering the airspace. There are no Restricted Areas in the immediate vicinity of Pinal Airpark.

## **OTHER CONTROLLED AIRSPACE**

An area designated as "Alert Area A-231" is located just northwest of Phoenix and approximately 90 miles northwest of Pinal Airpark. The Sectional Chart alerts pilots flying in this area to be aware that there is the likelihood of military student jet transition training occurring.

In addition, Tucson Airport Radar Service Area (ARSA) is depicted to the south, within 20 miles of Pinal Airpark. An ARSA is an area of controlled airspace wherein pilots are required to have 2-way radio communication with the air traffic control tower before entering and while operating within the airspace.

The Sectional Chart also depicts the following Federal (Victor) airways ("highways in the sky"): V-16, which passes on a northwest/southeast course directly over the Airpark; V-66-105, which passes on a west-northwest/east-southeast course approximately 13 miles to the west of the Airpark; V-94, which passes on a west-northwest/east-southeast course

approximately 17 miles to the east of the Airpark. The following Military Training Routes are depicted on the Sectional Chart: V-244-246, which passes on a northeast/southwest course about 13 miles southeast of the Airpark; V-239, which passes on a northeast/southwest course about 9 miles north of the Airpark; V-219, which passes on a northeast/southwest course about 8 miles west of the Airpark; and V-223, which passes on a northwest/southeast course about 30 miles west of the Airpark.

While bordered to the north, west, and south by relatively complicated airspace, Pinal Airpark itself is located in an area of uncomplicated airspace structure and usage (refer to Figure 5). The published elevation of the Airpark is 1,891 feet above mean sea level (MSL). The traffic pattern at Pinal is designated as a standard left-turn traffic pattern for Runways 12 and 30, at 2,900 feet MSL.

The initial evaluation of the airspace surrounding Pinal Airpark indicates that the Airpark is relatively free of constraints and should remain that way in the future. The activities at the Airpark performed by the military operations will cause the greatest concern to civilian pilots using the facility. The Department of Defense (DOD) high-altitude parachute jumping activity and the Army National Guard training operation create very significant safety hazards for general aviation pilots choosing to use Pinal Airpark.

### **AIR TRADE AREA**

The area served by an airport is commonly designated as its air trade area and may have its limits fixed by the existence of other airports offering comparable service; physical barriers such as rivers, lakes, or mountains; or by other means. It is important to determine the approximate boundaries of an air trade area because the demand for aviation facilities and services at an airport depends, to a large extent, upon the socioeconomic characteristics of the trade area.

The air trade area for an airport typically encompasses the location of 80 to 90 percent of the facility's users, airline passengers, or the owners of general aviation aircraft based at the airport. The precise shape of the air trade area is dependent upon cost, type, and availability of desired services; population density and distribution; personal preferences; and ground transportation facilities.

In the case of Pinal Airpark, the size of the air trade area under the present operation is not as important as other general aviation facilities competing with one another for business. Evergreen Air Center at the present time creates its own business by working on company-owned aircraft or other aircraft under contract for third-party maintenance. Most of the work being performed by the company does not come from what one normally considers the airport's air trade area. Many of the general aviation aircraft based within the Pinal Airpark air trade area use other facilities for services and storage. We have discussed air trade areas further, because there may come a time when Pinal Airpark is operated under a different practice than it is today. It is not anticipated that, during the

life of the Evergreen Air Center lease with Pinal County, the operation will change. The lease expires in 17 years, if not extended, and the County could establish a different type of operation for the Airpark.

Air trade areas are defined in two ways—commercial service air trade area and general aviation air trade area. In the **National Plan of Integrated Airport Systems (NPIAS)**, dated March 1991, the FAA defined commercial service areas (air trade areas) in terms of "reasonable access," which exists relative to scheduled air service and the community's central business district or a community's center of user population.

The NPIAS suggests that "reasonable access" (also called door-to-door travel time) to general aviation facilities is 30 minutes' surface travel time. For commercial service airports, however, 60 minutes' surface travel time is a more appropriate reasonable-access guide, based on industry experience. Under normal conditions, such as those for which these guidelines were established, it is possible to develop two distinct air trade areas for Pinal Airpark—a commercial service air trade area and a general aviation air trade area. **Figure 6** depicts isochronal lines representing approximate travel times in 30- and 60-minute increments from Pinal Airpark.

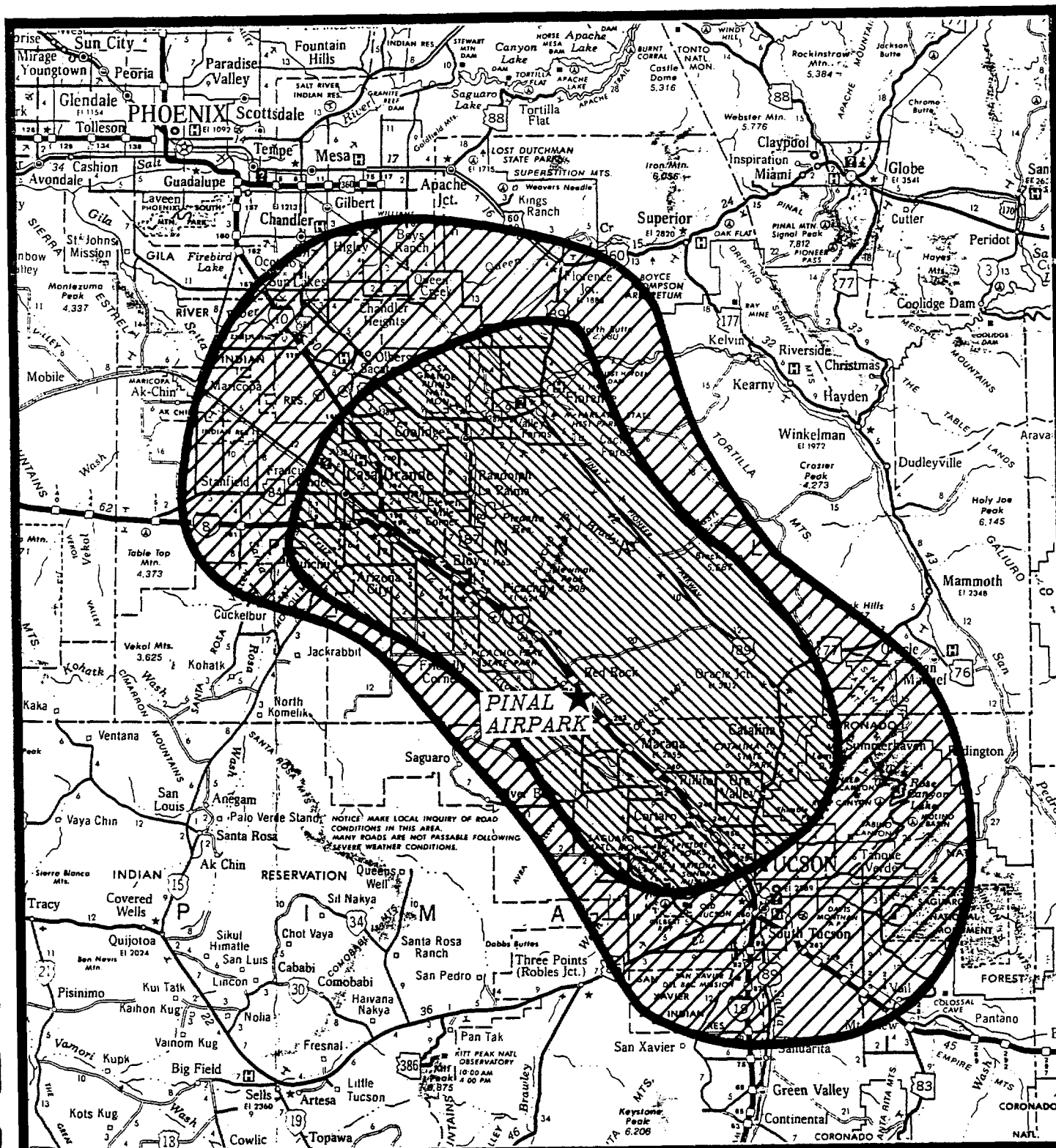
As shown on **Figure 6**, only the Casa Grande, Eloy, and Avra Valley general aviation airports are within the 30-minute surface travel area. Within the commercial 60-minute surface travel isochronic boundary is Tucson International Airport.



The two air trade areas for Pinal Airpark include portions of both Pinal and Pima Counties. Both Counties impact the airpark and are included within the two air trade areas, so in developing and analyzing statistical data, it was necessary that the socioeconomic characteristics of Pinal and Pima Counties be considered. Therefore, data from both Pinal and Pima Counties were used as a basis for assessing future aviation demand.

## **CONCLUSION**

The information discussed on the preceding pages forms the basis for the remaining elements of this study. Additional analysis and evaluation was conducted on many of the topics raised in this Chapter, plus other subjects for review. Therefore, this data base was the initial step in a process to determine future aviation needs and the means to accommodate those needs.

The next chapter develops aviation demand forecasts for Pinal Airpark. The results provide input for all subsequent tasks in the study process, including facility requirements, alternatives, and the refined airport plan recommendations.

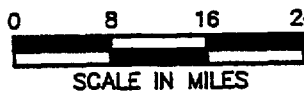


30 - MINUTE SURFACE TRAVEL TIME   
 60 - MINUTE SURFACE TRAVEL TIME 

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 MARANA, ARIZONA



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AIR TRADE AREA

FIGURE 6